

IN THE CLAIMS:

The text of the claims are reproduced below for the Examiner's convenience.

1. (Previously Presented) A remanufacturing method of remanufacturing a process cartridge comprising:

(a) a step of preparing a used process cartridge which comprises a toner developing container, a cleaning container and pins for coupling the toner developing container and the cleaning container at opposite longitudinal ends of the process cartridge;

the toner developing container including a toner accommodating portion, a toner supply opening, a developing roller and a developing blade;

the cleaning container including an electrophotographic photosensitive drum;

(b) a container separating step of separating the process cartridge into the toner developing container and the cleaning container by disengaging the pins from the process cartridge;

(c) a developing roller dismounting step of dismounting the developing roller from the toner developing container separated by said container separating step;

(d) a developing blade dismounting step of dismounting the developing blade from the toner developing container separated by said container separating step;

(e) an elastic member mounting step of mounting an elastic member at a position spaced from the toner accommodating portion to a longitudinally inside portion of an end seal provided adjacent each of opposite longitudinal ends of the developing roller dismounted in said developing roller dismounting step or another developing roller;

(f) a developing blade mounting step of mounting the developing blade dismounted in said developing blade dismounting step or another developing blade on the toner developing container separated in said container separating step or another toner developing container;

(g) a developing roller mounting step of mounting the developing roller dismounted in developing roller dismounting step or another developing roller on the toner developing container having the developing blade mounted in said developing blade mounting step and separated in said container separating step or the another toner developing container having the developing blade mounted in said developing blade mounting step;

(h) a toner refilling step of refilling the toner into the toner accommodating portion of the toner developing container having the developing blade mounted in said developing blade mounting step and the developing roller mounted in said developing roller mounting step and being separated in said container separating step or a toner accommodating portion of the another toner developing container having the developing blade mounted in said developing blade mounting step and the developing roller mounted in said developing roller mounting step; and

(i) a container coupling step of coupling the toner developing container having the developing blade mounted in said developing blade mounting step and the developing roller mounted in said developing roller mounting step and being separated in said container separating step or the another toner developing container having the developing blade mounted in said developing blade mounting step and the developing roller mounted in said developing roller mounting step with the cleaning container separated in said container separating step or another cleaning container by engaging the pins disengaged in said container separating step or other pins into them.

2. (Previously Presented) A method according to Claim 1, further comprising a flexible sheet mounting step of mounting after said elastic member mounting step and, before said toner refilling step, a flexible sheet to the toner developing container separated in said container separating step or the another toner developing container so as to extend along the longitudinal direction of the developing roller when the developing roller is mounted to the toner developing container separated in said container separating step or the another toner developing container.

3. (Previously Presented) A method according to Claim 2, wherein in said flexible sheet mounting step, each of longitudinal ends of the flexible sheet extends over a surface of the elastic member and a part of the end seal.

4. (Previously Presented) A method according to Claim 2 or 3, further comprising a first and second side seal mounting step of mounting, after said flexible sheet mounting step, a first side seal continuously on a longitudinal end of the flexible sheet mounted on the toner developing container separated in said container separating step or the another toner developing container and on the toner developing container separated in said container separating step or the another toner developing container, and a second side seal continuously on the other longitudinal end of the flexible sheet mounted on the toner developing container separated in said container separating step or the another toner developing container and on the toner developing container separated in said container separating step or the another toner developing container.

5. (Previously Presented) A remanufacturing method of remanufacturing a process cartridge comprising:

(a) a step of preparing a used process cartridge which comprises a toner developing container, a cleaning container and pins for coupling the toner developing container and the cleaning container at opposite longitudinal ends of the process cartridge;

the toner developing container including a toner accommodating portion, a toner supply opening, a developing roller and a developing blade;

the cleaning container including an electrophotographic photosensitive drum;

(b) a container separating step of separating the process cartridge into the toner developing container and the cleaning container by disengaging the pins from the process cartridge;

(c) a developing roller dismounting step of dismounting the developing roller from the toner developing container separated by said container separating step;

(d) a developing blade dismounting step of dismounting the developing blade from the toner developing container separated by said container separating step;

(e) an elastic member mounting step of mounting an elastic member at a position spaced from the toner accommodating portion to a longitudinally inside portion of an end seal provided adjacent each of opposite longitudinal ends of the developing roller dismounted in said developing roller dismounting step or another developing roller;

(f) a flexible sheet mounting step of mounting a flexible sheet to the toner developing container separated in said container separating step or another toner developing container so as to extend along the longitudinal direction of the developing roller on which the elastic member is

mounted in said elastic member mounting step when the developing roller on which the elastic member is mounted in said elastic member mounting step is mounted to the toner developing container separated in said container separating step to which the flexible sheet is mounted in said flexible sheet mounting step or to the another toner developing container to which the flexible sheet is mounted in said flexible sheet mounting step;

(g) a first and second side seal mounting step of mounting a first side seal continuously on a longitudinal end of the flexible sheet mounted on the toner developing container having the flexible sheet mounted in said flexible sheet mounting step and separated in said container separating step or the another toner developing container having the flexible sheet mounted in said flexible sheet mounting step and on the toner developing container having the flexible sheet mounted in said flexible sheet mounting step and being separated in said container separating step or the another toner developing container having the flexible sheet mounted in said flexible sheet mounting step, and mounting a second side seal continuously on the other longitudinal end of the flexible sheet mounted on the toner developing container having the flexible sheet mounted in said flexible sheet mounting step and separated in said container separating step or the another toner developing container having the flexible sheet mounted in said flexible sheet mounting step and on the toner developing container having flexible sheet mounted in said flexible sheet mounting step and separated in said container separating step or the another toner developing container having the flexible sheet mounted in said flexible sheet mounting step;

(h) a developing blade mounting step of mounting the developing blade dismounted in said developing blade dismounting step or another developing blade on the toner developing container having the flexible sheet mounted in said flexible sheet mounting step and separated in

said container separating step or the another toner developing container having the flexible sheet mounted in said flexible sheet mounting step;

(i) a developing roller mounting step of mounting the developing roller dismounted in said developing roller dismounting step or another developing roller on the toner developing container having the flexible sheet mounted in said flexible sheet mounting step and separated in said container separating step or the another toner developing container having the flexible sheet mounted in said flexible sheet mounting step;

(j) a toner refilling step of refilling the toner into the toner accommodating portion of the toner developing container having the flexible sheet mounted in said flexible sheet mounting step and separated in said container separating step or a toner accommodating portion of the another toner developing container having the flexible sheet mounted in said flexible sheet mounting step; and

(k) a container coupling step of coupling the toner developing container having the flexible sheet mounted in said flexible sheet mounting step and separated in said container separating step or the another toner developing container having the flexible sheet mounted in said flexible sheet mounting step with the cleaning container separated in said container separating step or another cleaning container by engaging the pins disengaged in said container separating step or other pins into them.

6. (Previously Presented) A method according to Claim 1 or 5, wherein the elastic member is mounted on a side of the end seal.

7. (Previously Presented) A method according to any one of Claims 1 to 3 and 5, wherein the end seal is made of a plastically deformable material.

8. (Previously Presented) A method according to any one of Claims 1 to 3 and 5, wherein said toner refilling step is carried out through a toner filling opening after said elastic member mounting step, said developing blade mounting step, and said developing roller mounting step.

9. (Original) A method according to any one of Claims 1 to 3 and 5, wherein in said developing blade mounting step, a new developing blade or a used developing blade is mounted.

10. (Previously Presented) A method according to any one of Claims 1 to 3 and 5, wherein in said developing roller mounting step, a new or used developing roller is mounted.

11. (Previously Presented) A method according to any one of Claims 1 to 3 and 5, wherein the cleaning container includes a cleaning blade mounted thereon and accommodates developer removed from the electrophotographic photosensitive member, and wherein prior to said container coupling step, the electrophotographic photosensitive drum and the cleaning blade are dismounted from the cleaning container, and toner which has been removed from the electrophotographic photosensitive drum and accommodated in the cleaning container, is removed.

12. (Previously Presented) A method according to Claim 11, wherein after the toner is removed, a new or used electrophotographic photosensitive drum and a new or used cleaning blade are mounted.

13. (Previously Presented) A method according to any one of Claims 1 to 3 and 5, wherein the toner supply opening supplies the toner accommodated in the toner accommodating portion to the developing roller, wherein said remanufacturing method is implemented by pulling out a toner seal, for sealing the toner supply opening to supply toner accommodated in the toner accommodating portion to the developing roller.

14. (Previously Presented) A remanufacturing method of remanufacturing a process cartridge comprising:

(a) a step of preparing a used process cartridge which comprises a toner developing container, a cleaning container and pins for coupling the toner developing container and the cleaning container at opposite longitudinal ends of the process cartridge;

the toner developing container including a toner accommodating portion, a toner supply opening, a developing roller, and a developing blade;

the cleaning container including an electrophotographic photosensitive drum;

(b) a container separating step of separating the process cartridge into the toner developing container and the cleaning container by disengaging the pins from the process cartridge;



(c) a developing roller dismounting step of dismounting the developing roller from the toner developing container separated by said container separating step;

(d) a developing blade dismounting step of dismounting the developing blade from the toner developing container separated by said container separating step;

(e) an elastic member mounting step of mounting an elastic member at a position spaced from the toner accommodating portion to a longitudinally inside portion of an end seal provided adjacent each of opposite longitudinal ends of the developing roller dismounted in said developing roller dismounting step or another developing roller;

(f) a toner refilling step of refilling the toner into the toner accommodating portion of the toner developing container having the elastic member mounted in said elastic member mounting step and being separated in said container separating step or a toner accommodating portion of the another toner developing container having the elastic member mounted in said elastic member mounting step and through the toner supply opening of the toner developing container having the elastic member mounted in said elastic member mounting step and being separated in said container separating step or through a toner supply opening of the another toner developing container having the elastic member mounted in said elastic member mounting step;

(g) a developing blade mounting step of mounting the developing blade dismounted in said developing blade dismounting step or another developing blade on the toner developing container separated in said container separating step or another toner developing container;

(h) a developing roller mounting step of mounting the developing roller dismounted in said developing roller dismounting step or another developing roller on the toner developing container having the developing blade mounted in said developing blade mounting step and

separated in said container separating step or the another toner developing container on which the developing blade is mounted in said developing blade mounting step; and

(i) a container coupling step of coupling the toner developing container having the developing blade mounted in said developing blade mounting step and the developing roller mounted in said developing roller mounting step and being separated in said container separating step or the another toner developing container having the developing blade mounted in said developing blade mounting step and the developing roller mounted in said developing roller mounting step with the cleaning container separated in said container separating step or another cleaning container by engaging the pins disengaged in said container separating step or other pins into them.

15. (Previously Presented) A method according to Claim 14, further comprising a flexible sheet mounting step of mounting, after said elastic member mounting step and before said toner refilling step, a flexible sheet to the toner developing container separated in said container separating step or the another toner developing container so as to extend along the longitudinal direction of the developing roller when the developing roller is mounted to the toner developing container separated in said container separating step or the another toner developing container.

16. (Previously Presented) A method according to Claim 15, wherein in said flexible sheet mounting step, each of longitudinal ends of the flexible sheet extends over a surface of the elastic member and a part of the end seal.

17. (Previously Presented) A method according to Claim 15 or 16, further comprising a first and second side seal mounting step of mounting, after said flexible sheet mounting step, a first side seal continuously on a longitudinal end of the flexible sheet mounted on the toner developing container separated in said container separating step or the another toner developing container and on the toner developing container separated in said container separating step or the another toner developing container, and a second side seal continuously on the other longitudinal end of the flexible sheet mounted on the toner developing container separated in said container separating step or the another toner developing container and on the toner developing container separated in said container separating step or the another toner developing container.

18. (Previously Presented) A remanufacturing method of remanufacturing a process cartridge comprising:

(a) a step of preparing a used process cartridge which comprises a toner developing container, a cleaning container and pins for coupling the toner developing container and the cleaning container at opposite longitudinal ends of the process cartridge;

the toner developing container including a toner accommodating portion, a toner supply opening, a developing roller, and a developing blade;

the cleaning container including an electrophotographic photosensitive drum;

(b) a container separating step of separating the process cartridge into the toner developing container and the cleaning container by disengaging the pins from the process cartridge;

(c) a developing roller dismounting step of dismounting the developing roller from the toner developing container separated by said container separating step;

(d) a developing blade dismounting step of dismounting the developing blade from the toner developing container separated by said container separating step;

(e) an elastic member mounting step of mounting an elastic member at a position spaced from the toner accommodating portion to a longitudinally inside portion of an end seal provided adjacent each of opposite longitudinal ends of the developing roller dismounted in said developing roller dismounting step or another developing roller;

(f) a flexible sheet mounting step of mounting a flexible sheet to the toner developing container separated in said container separating step or another toner developing container so as to extend along the longitudinal direction of the developing roller on which the elastic member is mounted in said elastic member mounting step when the developing roller on which the elastic member is mounted in said elastic member mounting step is mounted to the toner developing container to which the flexible sheet is mounted in said flexible sheet mounting step and which was separated in said container separating step or to the another toner developing container to which the flexible sheet is mounted in said flexible sheet mounting step;

(g) a first and second side seal mounting step of mounting a first side seal continuously on a longitudinal end of the flexible sheet mounted on the toner developing container having the flexible sheet and separated in said container separating step or mounted on the another toner developing container in said flexible sheet mounting step and on the toner developing container having the flexible sheet mounted in said flexible sheet mounting step and separated in said container separating step or the another toner developing container having the flexible sheet

mounted in said flexible sheet mounting step, and a second side seal continuously on the other longitudinal end of the flexible sheet mounted on the toner developing container having the flexible sheet and separated in said container separating step or mounted on the another toner developing container having the flexible sheet mounted in said flexible sheet mounting step and on the toner developing container having the flexible sheet mounted in said flexible sheet mounting step and separated in said container separating step or the another toner developing container having the flexible sheet mounted in said flexible sheet mounting step;

(h) a toner refilling step of refilling the toner into the toner accommodating portion of the toner developing container having the flexible sheet mounted in said flexible sheet mounting step and being separated in said container separating step or a toner accommodating portion of the another toner developing container having the flexible sheet mounted in said flexible sheet mounting step, through the toner supply opening of the toner developing container having the flexible sheet mounted in said flexible sheet mounting step and being separated in said container separating step or through a toner supply opening of the another toner developing container having the flexible sheet mounted in said flexible sheet mounting step;

(i) a developing blade mounting step of mounting the developing blade dismounted in said developing blade dismounting step or another developing blade on the toner developing container having the flexible sheet mounted in said flexible sheet mounting step and separated in said container separating step or the another toner developing container having the flexible sheet mounted in said flexible sheet mounting step;

(j) a developing roller mounting step of mounting the developing roller dismounted in said developing roller dismounting step or another developing roller on the toner developing

container having the flexible sheet mounted in said flexible sheet mounting step and separated in said container separating step or the another toner developing container having the flexible sheet mounted in said flexible sheet mounting step; and

(k) a container coupling step of coupling the toner developing container having the flexible sheet mounted in said flexible sheet mounting step, the developing blade mounted in said developing blade mounting step and the developing roller mounted in said developing roller mounting step and being separated in said container separating step or the another toner developing container having the flexible sheet mounted in said flexible sheet mounting step, the developing blade mounted in said developing blade mounting step and the developing roller mounted in said developing roller mounting step with the cleaning container separated in said container separating step or another cleaning container by engaging the pins disengaged in said container separating step or other pins into them.

19. (Previously Presented) A method according to Claim 14 or 18, wherein the elastic member is mounted on a side of the end seal.

20. (Previously Presented) A method according to any one of Claims 14 to 16 and 18, wherein the end seal is made of a plastically deformable material.

21. (Previously Presented) A method according to any one of Claims 14 to 16 and 18, wherein in said developing blade mounting step, a new developing blade or a used developing blade is mounted.

22. (Previously Presented) A method according to any one of Claims 14 to 16 and 18, wherein in said developing roller mounting step, a new or used developing roller is mounted.

23. (Previously Presented) A method according to any one of Claims 14 to 16 and 18, wherein the cleaning container includes a cleaning blade mounted thereon and accommodates developer removed from the electrophotographic photosensitive member, and wherein prior to said container coupling step, the electrophotographic photosensitive drum and the cleaning blade are dismounted from the cleaning container, and toner which has been removed from the electrophotographic photosensitive drum and accommodated in the cleaning container, is removed.

24. (Previously Presented) A method according to Claim 23, wherein after the toner is removed, a new or used electrophotographic photosensitive drum and a new or used cleaning blade are mounted.

25. (Previously Presented) A method according to any one of Claims 14 to 16 and 18, wherein the toner supply opening supplies the toner accommodated in the toner accommodating portion to the developing roller, wherein said remanufacturing method is implemented by pulling out a toner seal, for sealing the toner supply opening to supply toner accommodated in the toner accommodating portion to the developing roller.

26. (Previously Presented) A method according to any one of Claims 1, 5, 14 and 18, wherein the process cartridge comprises a gear fixed co-axially with the electrophotographic photosensitive drum and a gear fixed co-axially with the developing roller, which gears are in meshing engagement, and wherein after said container coupling step, the toner developing container separated in said container separating step or the another toner developing container and the cleaning container are rotated about one of the pins to disengage the gears from each other or to make a back clearance of the meshing engagement larger than that during an image forming operation, and wherein the disengagement or larger back clearance is maintained.

27. (Previously Presented) A method according to Claim 26, wherein the toner developing container separated in said container separating step or the another toner developing container and the cleaning container are rotated toward each other about one of the pins at a portion across from the electrophotographic photosensitive drum, and a tape is stuck on the toner developing container separated in said container separating step or the another toner developing container and the cleaning container to maintain the disengagement or the larger back clearance.